

COAL MINING

JANUARY, 1951

"The Picture-Book of the Industry"

VOLUME 28, No. 1

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Earl Houser, New Bethlehem, uses Allis-Chalmers HD-19s to push highwall, clean coal seam, build roads and push scrapers.



Allis-Chalmers Graders are familiar sights on strip jobs. At left, Model AD-3 operated by Dunwell Contracting Corp., Salsburg. At right, Model D used by Mays Coal Co., Clarion.



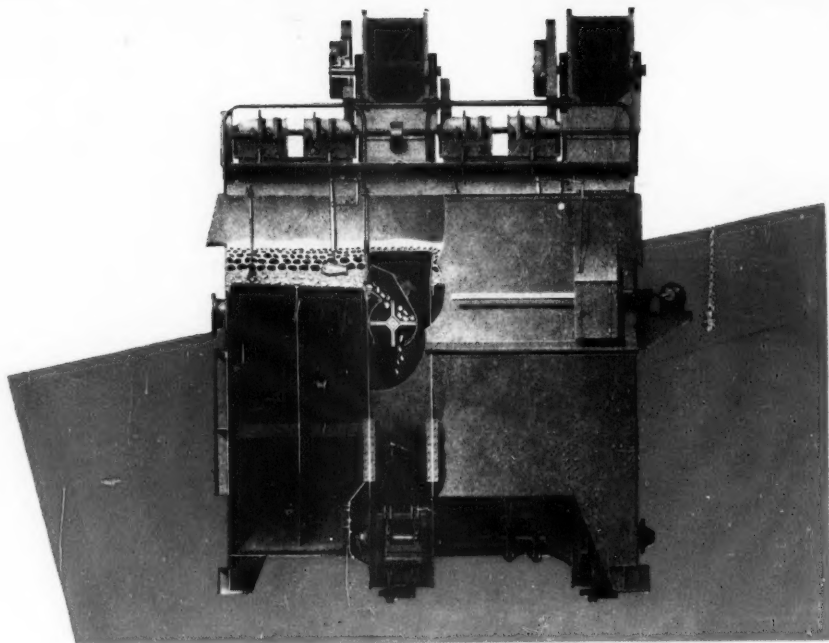
Jaeger "new standard" Model 135 on strip job of Earl Houser, New Bethlehem.

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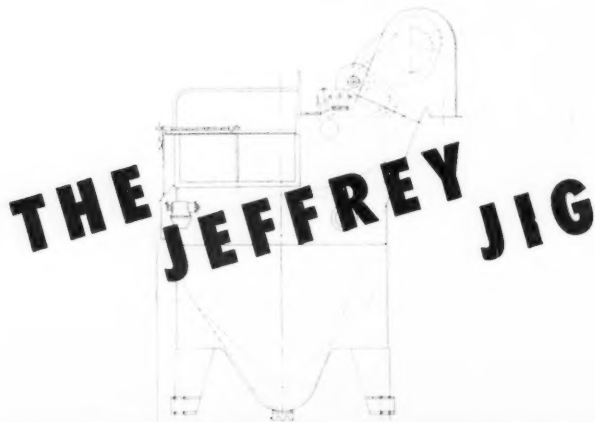


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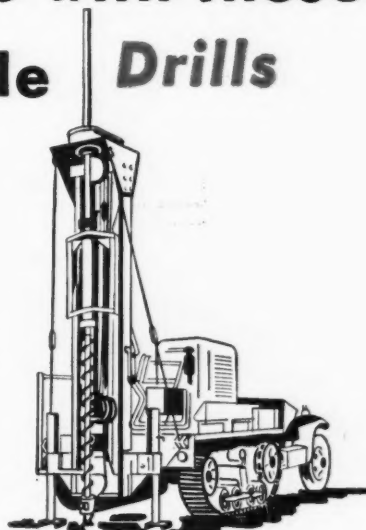
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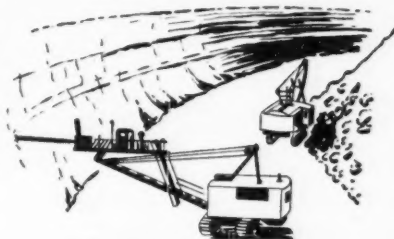
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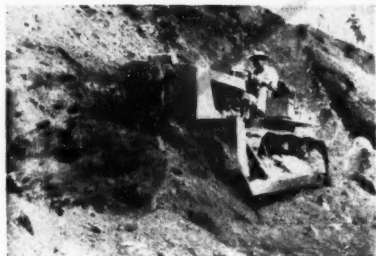
In Design and Manufacture That's why "Caterpillar" builds complete "package units"—tractor-scrapers, tractor-dozers—units that are balanced from their very inception.

With "Caterpillar" engineers, research men and field staff working as a unit, every portion of the "Caterpillar" package is considered in design, in testing, in obtaining the maximum in field performance. Nothing is left to chance—nothing is overlooked in striving to build the best in unit performance.

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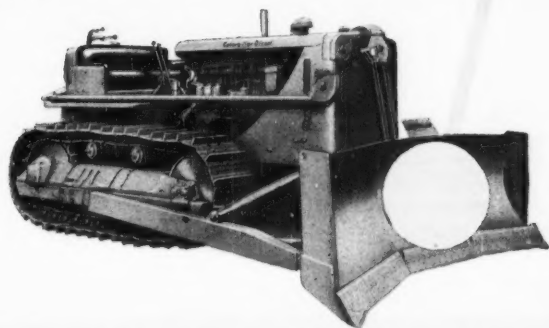
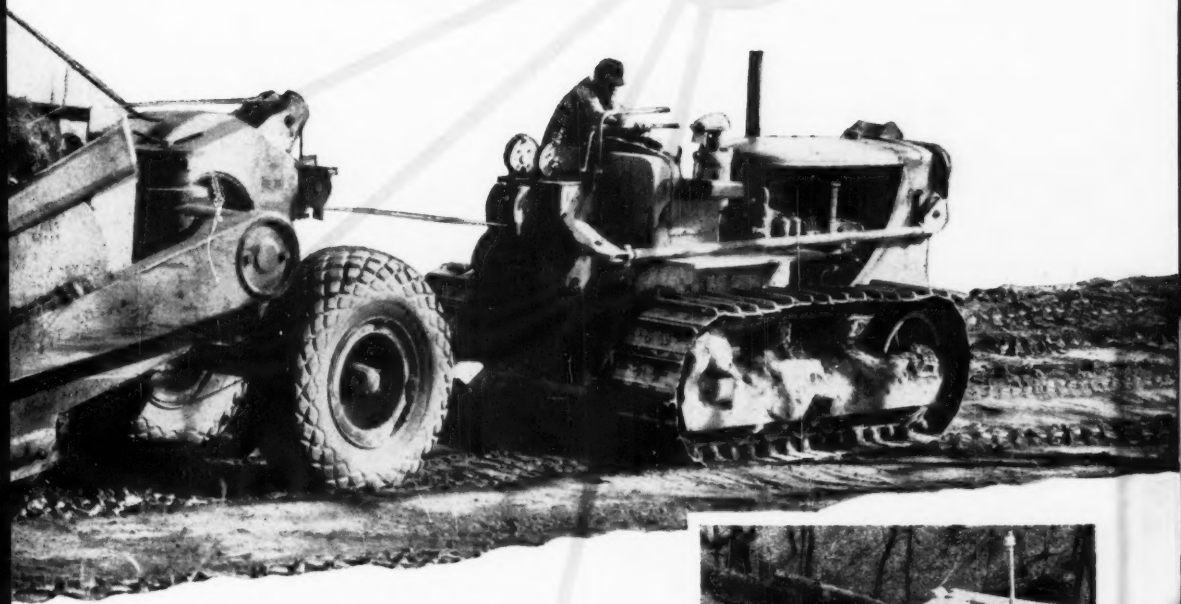
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This modern oil treatment speeds the de-watering of coal at the mine, keeps it out of the car and stockpile, thus eliminating the cause of freezing in winter.

PERMATREAT Coal Spray is easily applied at the mine after the coal is washed. Sprayed on under pressure, it coats every particle of coal. Water runs off as quickly as though from a duck's back. Melting snow and rain encountered in transit trickle through the load, does not have time to freeze into a solid mass.

Dealers say they seldom have to use shake-outs or other methods to unload cars of oil-treated coal. Industrial users find it speeds up removal of coal to stockpile and eliminates frozen coal stocks that require more time and labor to move.

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COAL MINING

Vol. XXVIII

JANUARY, 1951

No. 1

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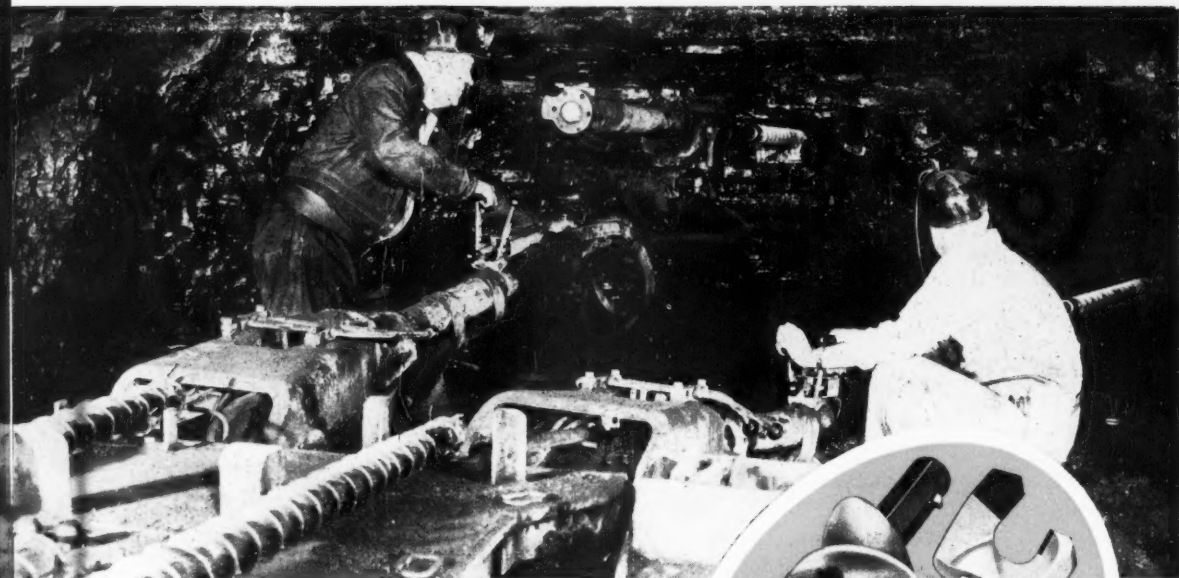
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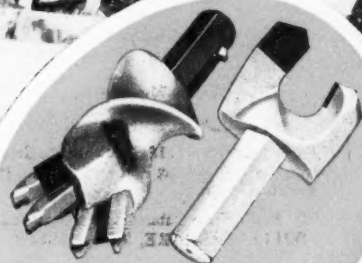


JOY CD-26 Coal Drill, for trackless operations.

PLACE AND CONDITIONS: A mine in Southern Illinois. About 2' of sulphurous coal at the bottom of the seam—extremely hard to drill or cut. A bad top requires them to move in and out of a panel fast.

FORMER METHOD: Since their drill could only put in 16 holes in the bony per shift, they had to bottom cut and then drill the softer, upper part of the seam.

PRESENT METHOD: With Sulmet Auger Bits, they can put in 260 holes per shift in the bony with the same drill. Therefore, they can now cut above the hard band and shoot the bottom up.



Sulmet Auger Bits are available in 1 1/4" to 3" dia. sizes... Finger bits for larger size holes as required.

RESULTS:

FORMER METHOD

Cutter chain life.....25,000 tons
Cutter bit cost.....\$.08 to \$.10/ton

PRESENT METHOD

Cutter chain life.....75,000 tons
Cutter bit cost.....\$.015 to \$.02/ton

This improvement is entirely due to the fact that Sulmet Bits permit high speed drilling in impurities without excessive auger bit cost.

*Consult a
Joy
Engineer*

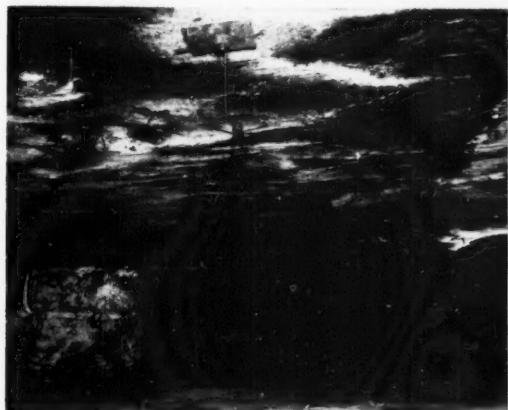
JOY MANUFACTURING COMPANY

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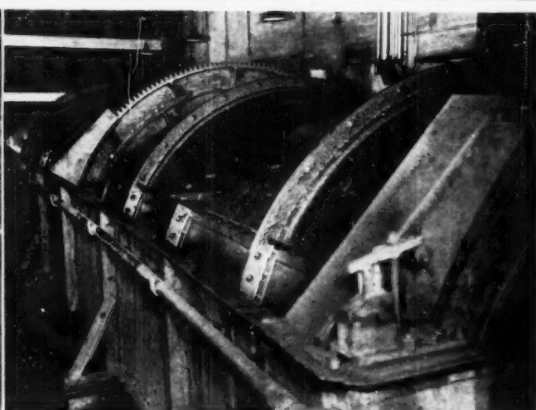
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

W & D CL 3346





General underground view showing roof bolting.



Two-car full revolving rotary dump.

New Concord Mine of The Tennessee Coal Iron and Railroad Company

High quality coal is an important factor in steel manufacture. As a major development in production and processing of this vital raw material in the South, Tennessee Coal, Iron and Railroad Company, a United States Steel subsidiary, has recently put into operation its new Concord Mine, located near Hueytown, Alabama, about 15 miles west of Birmingham. Equipped with the most modern devices to insure for employees safe and comfortable operations, together with maximum coal production and quality, the Concord Mine has utilized the latest approved developments in mine engineering underground, and coal cleaning facilities above

ground. At full capacity, this new mine will produce 7500 tons of washed coal a day.

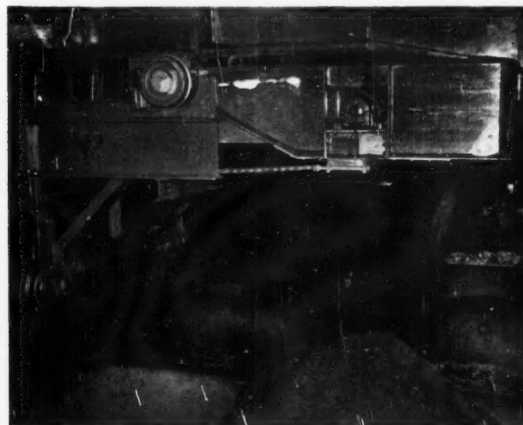
Cutting at the faces is by universal rubber-tire mounted machines. Mobile loaders, caterpillar mounted, load the coal into shuttle cars at a maximum rate of 5 tons a minute. The shuttle cars discharge into elevating conveyors for loading the mine cars.

To provide unobstructed haulage ways and working areas, roof in the new Concord Mine is pinned, making the general use of timbering unnecessary. Holes for roof pinning are driven at regular intervals through the roof and deep into the overlying sandstone. The inserted end of the rod is split

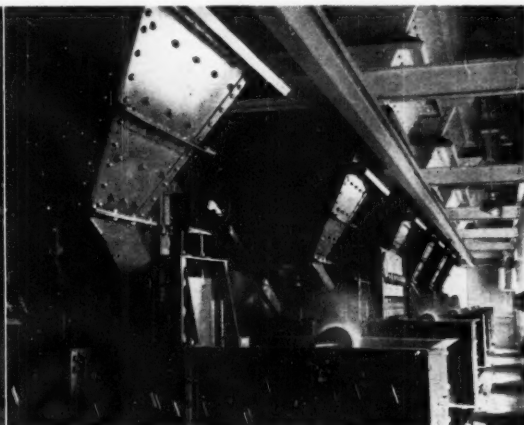
and into the split is placed a steel wedge. The rod is driven into the hole by a pneumatic stopper which expands the split end, locking it firmly into the sandstone. Over the exposed end of the rod, which is threaded, a square plate is bolted into place with an impact wrench, holding that section of the roof firmly.

The Concord Mine is equipped with eight-wheel, 7-ton capacity mine cars with automatic swivel couplings. Cars are hauled by 8-ton electric gathering locomotives. The main-line locomotives are 20-ton electrics.

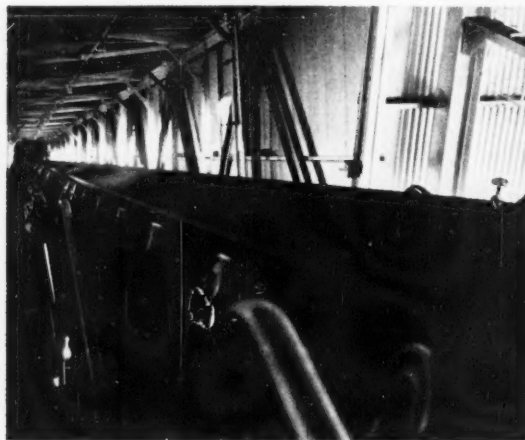
Because of the interlayering of rock and coal in this seam, known locally as the American Seam, and



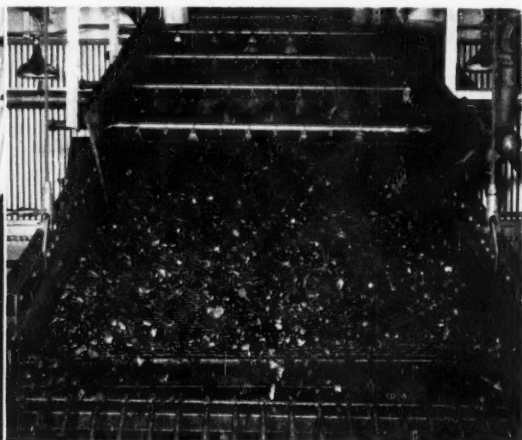
Raw coal feeding from shuttle belt to blending bins.



View of 30-inch variable speed feeder belts receiving coal from the air-operated bin pocket draw-off gates.



View of 48-inch belt conveyor transferring minus two-inch under-size material from both the screen and breaker to the blending bins.



One of the five six-foot double deck vibrating screens.

because of the exceptionally friable nature of the coal, elaborate installations had to be provided for adequate separating, cleaning and blending.

The coal with its rock bands is hauled to a two-car underground rotary dump which is operated by three 15-horsepower motors. This installation was designed and built by Tennessee Coal, Iron and Railroad Company. The dump is fed from a system of car hauls, also TCI designed and built. Two parallel tracks with cable car hauls, each feed 15 loads at a time to the dump car haul. This haul, equipped with car stops, feeds cars through the dump.

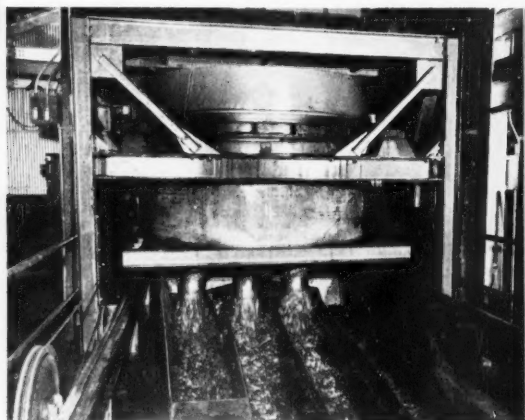
Coal and rock are fed by two apron feeders from the 75-ton capacity dump hopper, each discharging to a magnetic pulley belt

for the removal of tramp iron ahead of a scalping screen. Apron feeders are of manganese steel, 60 inches wide, 8 feet long and travel 20 feet a minute. Magnetic belt separators are 60 inches wide 15 feet long and travel 200 feet a minute. They are equipped with 42-inch diameter, 60-inch-face magnetic head pulleys for removal of tramp iron.

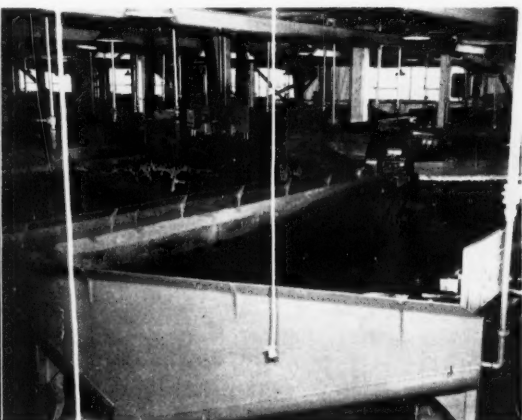
Two heavy-duty, foundry type, 5 by 10-foot single-deck scalping screens have grizzly-type decks and to prevent blinding, the openings taper from 6½ inches at the feed end to 7½ inches at the discharge end. Oversize from the screens is reduced to minus 8 inches in two, 36-inch diameter by 54-inch-face, single-roll, crushers, operating at 59 revolutions a minute.

Crushed oversize and screen undersize go into a 60-ton double surge bin, from which they are removed by two apron feeders. These are heavy-duty feeders, 36 inches wide, 8 feet long and travel at 60 feet a minute. Feeders drop the crushed run-of-mine coal onto a 42-inch buffer belt on 88-foot centers. With a slope slightly more than 17 degrees and traveling at 575 feet a minute, the buffer belt brings the flow of material up to the speed of the main slope belt.

The main slope belt at the time of its installation was the largest of its kind, insofar as horsepower and lift were concerned. With a maximum pull of 80 tons on the head pulley, the belt stresses were so great that a steel cable core had to be built into the belt fabric. This belt is 42 inches wide and has



Primary distributor which divides the feed pulp into two to eight parts, with all parts being quantitative and qualitative equals.



Washing tables where the feed is separated into washed coal and refuse in the proportion of six parts washed coal to one part refuse.

a total lift of 730 feet. It is slightly under 4900 feet long on centers about 2450 feet. Its capacity is 1000 tons an hour. Drive is imparted by double pulleys with a 270-degree belt wrap on each pulley. Power for the lower pulley is developed by two 300-horsepower motors with herringbone speed reducers, and for the upper pulley by one 300 horsepower motor and reducer. The belt slope is 17 degrees, 21 minutes and the head pulley is 73 feet above the ground. Tension is maintained by a gravity take-up.

A rectangular magnet, suspended over the head pulley of the main slope belt, removes tramp iron which was missed by the magnetic-belt separator underground. Coal and rock spill into a separator car which divides the flow into two streams that feed two parallel lines of equipment. The separator car, designed by Tennessee Coal, Iron and Railroad Company, can be set to separate the stream of material or, for maintenance purposes, to divert the total flow into either of the two processing lines. Breakdown in one of the two lines automatically sets the separator car to divert the stream to the other. Each of the two lines is capable of handling close to the total mine capacity.

In the two processing lines the coal and rock first pass over double-deck, heavy-duty vibrating screens. These screens are 6 by 12 feet with "non-blinding" grizzly-type top decks with tapered openings for a nominal 8-inch separation. The top deck oversize, all rock, goes to a single-roll crusher.

The bottom deck, equipped with 2-inch square openings, discharges oversize to a revolving breaker. The 2-inch by zero bottom deck undersize drops to a 48-inch conveyor for transport to the blending bins.

The single-roll crusher is 36 inches in diameter with a 54-inch face and operates at 59 revolutions a minute. It reduces the rock to minus 3 inches and delivers it onto a conveyor for transport to the rock bin. All rock is crushed as a dump fire-control measure.

The revolving breakers are 9 feet in diameter and 14 feet long, with 2-inch round perforations in the shells. There are no fins as in conventional breakers, the grinding action of the rock being sufficient to reduce the coal to minus 2 inches. Coal falls through the perforations to a 48-inch conveyor for transport to the blending bins. Rock is tumbled through the breaker and discharged to the single-roll crusher. The conveyor from the crusher is 36 inches wide, operates on 261-foot centers and travels 212 feet a minute. It discharges into a 150-ton bin. Crushed rock from the bin is loaded into 22-ton semi-trailer trucks for transport to the dump. The transfer conveyor from vibrating screens and revolving breakers is 48 inches wide, operates on 178-foot centers and travels 383 feet a minute on an 18-degree slope to the blending bins.

Blending bins are arranged in three rows of eight pockets each, with each pocket subdivided into four vertical compartments. Coal is delivered by a 60-inch tripper belt operating on 205-foot centers

at 230 feet a minute. It feeds a self-propelled tripper-shuttle unit which consists of a 60-inch belt on 24-foot centers. The tripper shuttle receives 2-inch by zero raw coal which it diverts to either side for loading any of the bin pockets. Blending bins have a nominal capacity of 6000 tons.

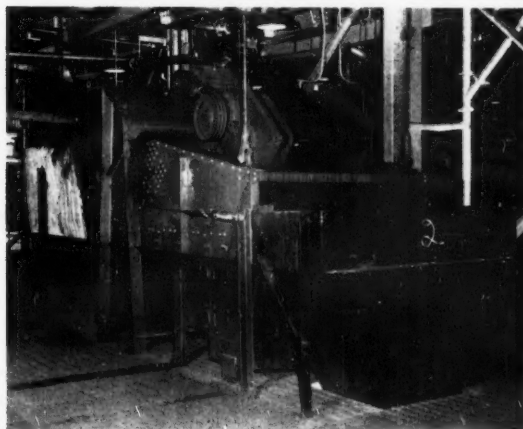
Coal from the blending bins is delivered through feeder gates mounted below each of the 24 pockets to eight feeder belts, each serving three pockets. Feeder belts, which discharge to the main collector belt, are 30 inches wide and operate on 43-foot centers at variable speed. Gates are air operated and only one gate of the three in each set can be opened at one time.

To make sure that coal from the gates is moving, it is necessary to keep all eight belts under continual observation. To eliminate the constant walking involved in this patrol, a simple wooden paddle mounted over each of the feeder belts was added. Blades of the paddles are turned as the coal passes under them. An observer from any point on the floor can check whether the coal is moving simply by observing whether all the paddle wheels are in motion.

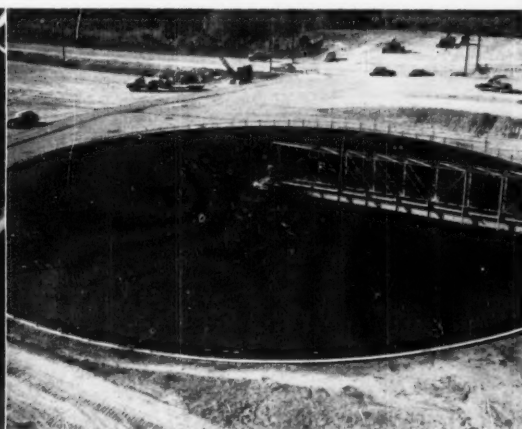
The main collector belt from the bins is 54 inches wide and operates on 525-foot centers at 435 feet a minute up a 20-degree slope. This belt carries the 2-inch by zero raw coal to a surge bin at the top of the preparation building.

From the 25-ton capacity surge

(Continued on Page 15)



One of the eight six-foot by 16-foot horizontal vibrating screens on which the table washed coal is dewatered.



General view of thickener.



Overall view of the Safety Day Events at the Red Jacket Coal Corporation, Red Jacket, W. Va.

Red Jacket Family Picnic and Safety Day

The Red Jacket Family Picnic and Safety Day was held Saturday, August 5, at the ball park at Red Jacket, West Virginia. Over 3,000 people were present coming from the Red Jacket Plants at Wyoming, Coal Mountain, Keen Mountain, Mitchell Branch and Junior.

The activities were opened with a Mine Rescue Contest in which four teams were entered. One from Mitchell Branch, one from Junior and two from Wyoming. These teams were required to work out a problem in Mine rescue and recovery work under simulated conditions that would be found following a mine fire or explosion.

The team from Junior under the

leadership of Captain Lewis Simpkins won first prize. The other members of the team were: John H. Turner, John Halley, Nakomas Sloan, George Williamson, Jr., and Roby Pope. Second prize went to the Wyoming team captained by Carl Bradford. Members were: Junior Bowling, George Mabe, David Cox, Rodney Lester and Joe Smith.

Following the Mine Rescue Contest, the activities were officially opened by a prayer by J. B. Garrett, Pastor of the Red Jacket Community Church and opening remarks were made by William M. Ritter, General Manager, Red Jack-

et Coal Corporation, who acted as director of the program.

The program was turned over to J. B. Garrett, chairman of the games committee and games for boys, girls, men and women were featured. The 50-yard dash for boys from 8 to 10 years old was won by Danny Blankenship with Don Testerman, second and Danny Ray Starr, third. For the 10-12 year olds, Craig Mankin, first; Lige Lawrence, second and Rodney Edwards, third. 12-14 years—Barbage Hammond, first; George Williamson, second and Raymond Clusky, third.

Girls 50-yard dash: 8-10 years old—Linda Lopez, first; Evelyn



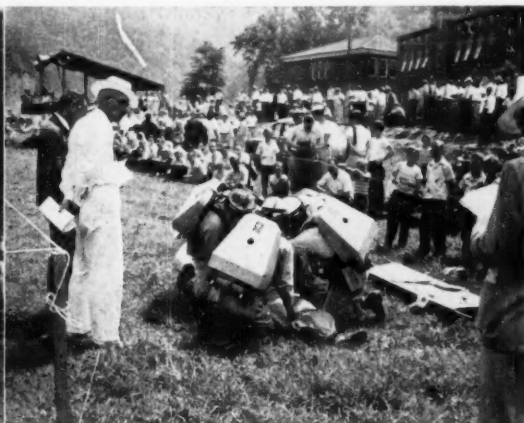
Team from the Wyoming Mine, Red Jacket Coal Corp., won first place in the Red Jacket Safety Day Meet. Left to right: standing, Capt. Fred Thomas, Carl Thomas, Ray Boles, Denver Ellison, W. M. Oneal, kneeling is Elias Roberts.



Keen Mountain team of the Red Jacket Coal Corp. won third place in the Red Jacket Safety Day meet. Left to right: Capt. Barnard Farmer, Hubert Creed, George Osborne, Eugene Farmer, Lawrence Ratlife, Kara Allen.



Mine Rescue team reading problem at the Red Jacket meet.



Preparing rescue of patient found unconscious but breathing—Red Jacket.

Joyce Davis, second; and Shirley Ann Ison, third. For the 10-12 years—Anna Ison, first; Dolores Chafin, second; and Nora Williams, third. 12-14 years—ended in a tie between Shirley Wolford and Fronia Kinder. Boys sack race for 10-12 years won by Joe Vagott with Winfred Ogle, Jr., second, and Nickle Vagott, third. 12-14 years—George Williamson, first; Ronald Sykes, second; and Paul Meadows, third.

Wheelbarrow race was won by Frank Bolen and Jimmy Williamson with Pete Hartley and Lawrence Meade, second; and Rodney Edwards and George Williamson, third.

The nail driving contest for women was won by Mrs. Carlton Blankenship of Wyoming. Bubble gum contest was won by Freddie Blankenship from Red Jacket. The hog calling contest was won by

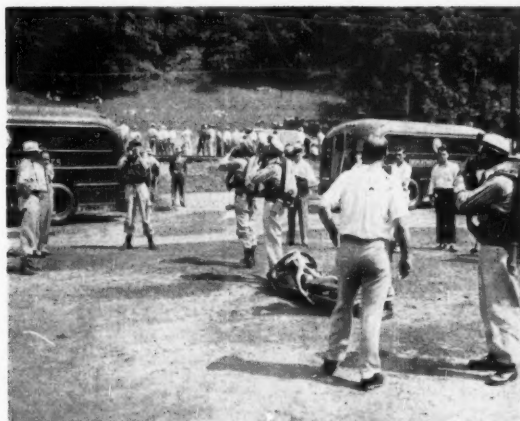
Charlie Tltizer with Elias Sipple, second. Three-legged race for boys 8-10 years: first—Tommy Harris and Tommy Fitzpatrick; second—Michael Kennedy and Ronald Kirk; third—John Plasky and Clifford Williams. 10-12 years: first—Lawrence Meade and Carl Hinkle; second—Andy Ball and Ronald Meade; third—Ronald Sykes and Rodney Edwards. 12-14 years: first—Charlie Taylor and Jackie Blankenship; second—Ralph Williams and Dane Hatfield; third—George Williamson and Cecil Hinkle.

In the music and entertainment contest, the Harmonizers of Red Jacket won first prize. They were: Jack Branahan, Beva Brown, Gib Brown and Clell Sipple. The Golden Trumpet Quartet, the Guyan Quartet and Garnet Statens String Band also participated.

Seven adult teams and two children's teams competed in the First-

Aid Contest. This contest was conducted by E. E. Quenon, Supervising Engineer, U. S. Bureau of Mines, as director and the judges were officials of the W. Va. Department of Mines and the U. S. Bureau of Mines.

The Wyoming team with Fred Thomas, captain, won first prize with a discount of two points for the three problems. Other members of this team were: Denver Ellison, Carl Thomas, Ray Boles, Herbert Clay, W. M. O'Neal, and Elias Roberts. Another team from Wyoming with Doug Halstead, captain, won second place. The other members of the team were: Hulen Mullens, Okey Mullens, Tommy Bailey, Oley Stewart, Gabor Gombos and Linford Lester. The team from Keen Mountain, Virginia, won third place. Bernard Farmer, captain, and other members were: Hubert Creed, Ted Osborne, Lawrence Ratliff, Carey



Mine Rescue team at Red Jacket making final adjustments of apparatus before entering mine.



Mine Rescue team testing for gas before entering mine—Red Jacket.



Keen Mountain team working first aid problem at Red Jacket Coal Corp. Safety day meet.



Wyoming and Keen Mountain teams working first aid problem at Red Jacket meet. Capt. of this Keen Mountain team is C. P. Keith.

Allen and Eugene Farmer. James Curry, captain of the colored team, won first place. Other members of the team were: Walter Martin, Ed Reed, Jack Belcher, Claude Berger, James Green and John E. Moore.

Both the boys and girls team won prizes. Minnie Lou Blankenship, captain of the girls' team. Other members: Eleanor Pollard, Betty Blankenship, Christa Shields, Bruce Cook, Lorraine Plasky, Barbara Orren, captain of the boys' team with John P. Hatfield, Freddie Blankenship, John C. Plasky, Joseph G. Plasky, John Cook, and Sonny Bellamy.

Short talks were made by Joseph Bierer, Administrative Assistant, W. Va. Department of Mines; Charles Kiser, District Representative, U.M.W.A.; and Paul D. Ritter, President of the Red Jacket Coal Corp.

This affair was sponsored by the

Red Jacket Coal Corporation and the U.M.W.A. Locals of Mitchell Branch, Junior, Wyoming, Coal Mountain and Keen Mountain. Each of the locals received a plaque award for their cooperation in making this a successful Safety Day. Presidents Tom Osborne, Mitchell Branch; Arthur Hardy, Junior; Virgil Harvey, Coal Mountain; William Dougherty, Wyoming; and Tom Owens, Keen Mountain, received the plaques on behalf of their members.

In addition to the cash prizes, many prizes were awarded during the activities; these included: five electric sweepers, five electric ironers, five electric mixers, a large electric refrigerator, washing machine, and radio.

Electric mixers were won by: Kermit Marshall, Red Jacket; Dewey Jackson, Keen Mountain; Ed-

ward Keith, Coal Mountain; Herbert A. Goode, Wyoming; and Huey Bailey, Red Jacket.

Electric ironers were won by: Brice LeMaster, Red Jacket; Luther Meadows, Keen Mountain; Jesse Woolum, Coal Mountain; Joseph C. Smith, Jr., Wyoming; and W. M. Sipple, Red Jacket.

Electric sweepers were won by: Charlie Davis, Red Jacket; Norman Keene, Keen Mountain; Robert Lowden, Coal Mountain; Jesse J. Gunter, Wyoming; and Frank Layne, Red Jacket.

The radio was won by Tom Keller of Red Jacket. The washing machine was won by Henry Wessell of Red Jacket and the refrigerator was won by Ty Hammond, also of Red Jacket.

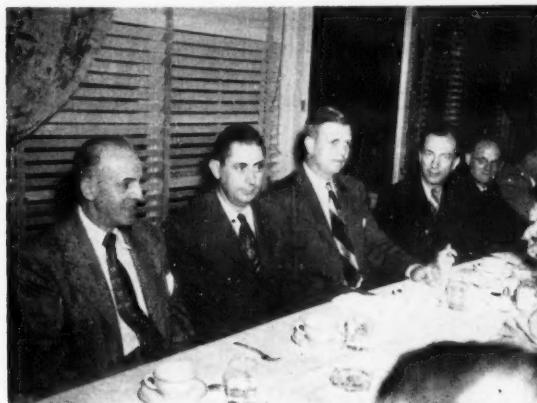
The meeting was adjourned with remarks by William M. Ritter and a prayer by J. B. Garrett.



Colored team working first aid problem at Red Jacket meet. Capt. is James Curry.



Girls and Boys teams working first aid problem at Red Jacket meet.



Seated at speakers' table; left to right: J. C. Davis, U. S. Bureau of Mines, Harry Hall, Bethlehem Collieries, Corp.; George McCaa, Program Chief of the Institute; Judge Max DeBerry, Toastmaster; K. W. Bartlette, President of the Institute



Standing left to right: Chas. Myers, A. E. Belton, J. J. Burke. Sitting: W. L. Doolittle, President, Consolidation Coal & Coke Co.; W. B. Jamison, Chief Eng. Jamison Coal & Coke Co.; Harold Sutter, President Monongahela Valley Coal Mining Institute; Wm. Berry, State Mine Inspector.

Northern W. Va. Coal Mining Institute Banquet

The 1950 Annual Banquet of the Northern West Virginia Coal Mining Institute was held at the Fairmont Hotel, Fairmont, West Virginia, Saturday, September 16.

The behavior of attendants at this banquet, compared with what it was several years ago, is amazing. A change from one of the roughest gatherings of coal men to the best behaved stag gathering in the industry is something to write about.



Banquet Co-Chairmen, J. J. Burke of the Hulburt Oil & Grease Co., left and Chas. H. Myers, Mine Safety Appliance Co.

Attendants were requested not to indulge in intoxicating liquors before or during the duration of the banquet. That request was strictly adhered to and an unusually large gathering was fed and a large number of prizes were awarded in record time. A prize winner was given his prize number and was requested to pick up his prize on his way home after the banquet. This method of handling was decided on



Standing: J. A. Price, Mine 63 Consolidation Coal Co.; A. J. Johnson, Safety Inspector, Consolidation Coal Co.; Roy G. Martz, Eastern Gas & Fuel Associates; Wm. Berry, State Mine Inspector; others unidentified.



J. H. Nuzum, Past President of the Institute, G. R. Higginbotham, Past President; A. E. Belton, Executive Secretary; C. E. Jenkins, First Vice President of the Institute.



Left to right: John Creed, Penn Machine Co.; J. J. Price, Consol Coal Co.; J. L. Sullivan, Jr., DuPont Powder Co.



Left to right: John Nay, Mine 32 Consolidation Coal Co.; A. A. Ash, Purchasing Agent Consol. Coal Co.; Geo. Ash, Mine 63 Consol. Coal Co.; Joe Knight, Mine 32 Consol. Coal Co.; Fred Higginbotham, Mine 32 Consol. Coal Co.; Dan Maurer, of Yoder & Maurer.

at a committee meeting and was under the direction of Charles H. Myers, representative of the Mine Safety Appliances Company and J. J. Burke, representative of Hulburt Oil and Grease Company. Entertainment was under the direction of J. J. Burke, Geo. W. McCaa and Alex Turner. Arrangements were supervised by Charles Myers, John Kodak and A. E. Belton. Reception committee was made up of George W. McCaa, George L. Judy, Lawrence H. Riggs and L. D. Boston.

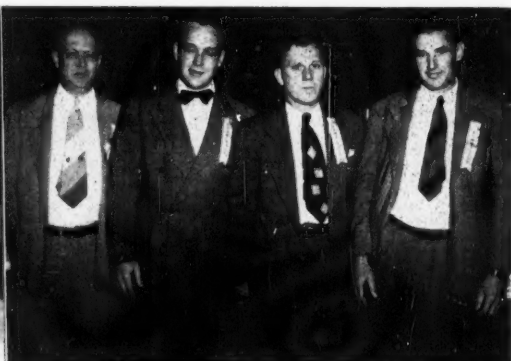
Officers for the ensuing year are as follows: K. W. Bartlett, President; A. E. Belton, Exec. Secretary; Geo. W. McCaa, Program Ch.; C. E. Jenkin, 1st Vice President; K. K. Kincell, 2nd Vice President; Members of Board—Otto Heyer, J. A. Taylor and W. M. Berry.



Maintenance foremen of the Consolidation Coal Co., Left: Ira Davis, Mine 38; U. D. Flint, Mine 97; Russell Morris, Exeretville Mine; and W. F. Rogers, Mine 63.



Members of Committee, Left: Geo. Judy, Asst. Supt. Mine 32; David Mainella, Foreman, Everettville Mine; B. J. McCormley, Engineer Freight office and Ed Waddell, office clerk Mine 97, all of the Consolidation Coal Co.



Members of Committee, Left: Dick Rawson, Austin Powder Co.; Ed Zuspan and Harry Turner, Consol. Coal Co.; Joe Anderson, Samson Engineering Co.



Members Banquet Committee. Left to right: Ed. Reynolds, Mine 93 Consolidation Coal Co.; J. Reynolds; John Saylor and Charles King of the Consolidation Coal Co.; and Ross Barr, Mine Safety Appliances Co.



Left to right: G. R. Spindler, Head School of Mines, West Virginia University; Russell Decker, Fairmont Machinery Co.; and Dick Johnson, Division Manager, Mine Safety Appliances Co.



Member of the Committee: Left Carroll Holbert, Williams Mine, Consolidation Coal Co.; John Spooner, Hulbert Oil & Grease Co.; Ralph Nick, Mine 63 Consol.



Members of Committee, Left: Fred Smay, Westinghouse; Jay Sembower, Eastern Gas & Fuel Associates; Charles Herron and Virgil Mackey of the Consol. Coal Co.

NEW CONCORD MINE OF THE TENNESSEE COAL, IRON AND RAILROAD COMPANY

(Continued from Page 9)

bin, coal is removed by a feeder belt 72 inches wide, operated on 15-foot centers at variable speed. This belt delivers coal to a 60-inch drag conveyor operating on 94-foot centers. The flights of the drag conveyor are spaced at 3-foot intervals. This conveyor scrapes the coal over a series of five graduated openings, each of which permits coal from different areas of the flight to drop onto a vibrating screen for wet screening.

The five, double-deck vibrating screens are 6 by 16 feet, with $\frac{3}{4}$ inch square openings in the top deck. The bottom deck has $\frac{5}{16}$ -inch square openings. There are

four rows of water sprays on each screen, and oversize from both decks recombines on a 42-inch wide conveyor for transport to a cone gravity separator. The screen undersize and water containing 40 per cent solids are conducted to a primary distributor.

The gravity separator is 12-foot diameter cone where a sand-water medium separates the oversize from the vibrating screen into washed coal and refuse, in the proportions of one part washed coal to two parts refuse. The sand in the tank is kept in suspension by an agitator. A torque control on the agitator automatically opens butterfly valves for the removal of refuse. The washed coal and refuse are each removed from the medium and dewatered on two 5 by 14-foot horizontal vibrating screens. The medium is returned

to the circuit. Washed coal is delivered to a 30-inch transfer belt, while refuse is removed on another similar belt.

Undersize pulp from the raw-coal sizing screens flows to a primary distributor, designed and built by Tennessee Coal, Iron and Railroad Company. This distributor is 9 feet in diameter and 9 feet high. It consists of a revolving top cylinder with seven outlets, three stationary compartmented bottom pans with four, five and six compartments and one bottom pan with seven compartments. The bottom pan will produce seven splits when held stationary, or eight splits when revolved. Arranged under the distributor are eight flumes fed by swivel spouts from the bottom pan. The primary distributor divides the $\frac{1}{4}$ -inch by

(Continued on Page 18)



View of part of pit. Note Caterpillar tractor pushing spoil.

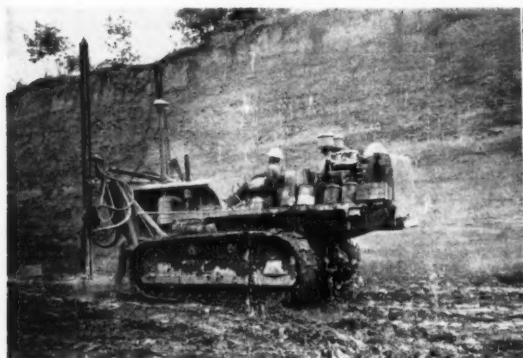


George Chandler and Baxter Milboun look after operations.

Chandler Brothers, Inc. Strip 2,000 Tons per Shift in 36 Inch Coal

The Chandler Brothers of Madisonville, Kentucky are producing 2,000 tons of Number 12 seam coal, running three feet thick, in an eight hour shift. The coal lies south of Madisonville and covered with a loam and shale that hardens as it thickens. This overburden is moved quite extensively with Caterpillar D-8 tractors equipped with 8-s bulldozers.

The coal in the seam is quite hard and must be drilled and shot for loading. This drilling is done with a D-8 tractor with two air drills mounted on its front end and a 600 cubic foot Sullivan air compressor mounted on the rear. Power for the compressor is v-belt take off from the tractor engine.

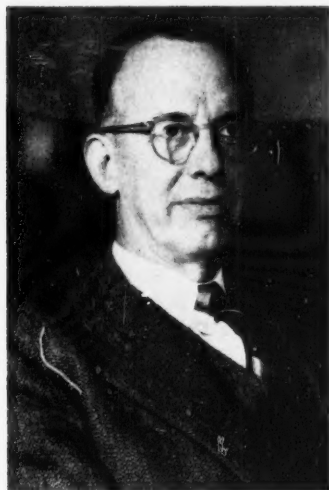


Caterpillar tractor with coal drills and air compressor unit.



Caterpillar tractor making truck road in one of the pits.

Here and There in the Coal Industry



Morris F. Cunningham

The Goodman Manufacturing Company, Chicago, announces the following changes in sales administration personnel: Morris F. Cunningham, formerly vice president and sales manager, has been elected vice president in charge of sales succeeding the late A. C. Green; William T. Ferguson, former assistant sales manager, has become sales manager; Cedric E. McWhorter, formerly district manager at Denver, has been

named mining engineer. Headquarters for all three will be the company's main office in Chicago. K. E. Caine will be assistant mining engineer in the Pittsburgh district.

Also announced are the appointments of L. W. Hall as new district manager at Denver, W. H. Carson as assistant district manager at Huntington, W. Virginia, and L. W. Peterson as manager of a branch sales office and supply depot

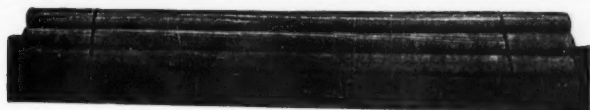


William T. Ferguson



Cedric E. McWhorter

in Birmingham, Alabama. This office will serve the states of Alabama and Western Tennessee and replaces Goodman representation by the General Machinery Co. of Birmingham. Other changes include the appointment of Mike Reid as sales engineer with headquarters in Bluefield, W. Virginia, and the transfer of sales engineer George Rupp from Middlesboro, Kentucky to Beckley, W. Virginia.



SECTIONAL TAMPING POLES

These Poles are made of straight grained wood and are coupled together with removable wood pins held in place in recessed grooves by a rubber band and can be quickly connected and unconnected.

Couplers and Head Blocks are 4, 5, and 6 inches in diameter. Please specify size when ordering. Poles are 1½ inches in diameter.

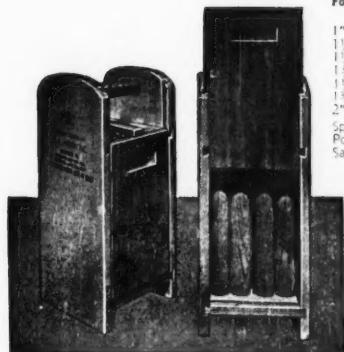
| | | |
|--------------------|-------|-------------|
| Couplers | ..... | \$3.40 Each |
| Head Blocks | ..... | \$3.80 |
| Poles 12 feet long | ..... | \$3.00 |
| Poles 14 feet long | ..... | \$3.50 |
| Poles 16 feet long | ..... | \$4.00 |
| Poles 18 feet long | ..... | \$5.40 |
| Poles 20 feet long | ..... | \$6.00 |
| Poles 22 feet long | ..... | \$7.70 |
| Poles 24 feet long | ..... | \$8.40 |

WOOD TAMPING POLES

For Tamping Explosive Shots: Poles are round made of Hardwood. Sizes to 10' long.

| | | |
|--------------|-------|--------------------|
| 1" diameter | ..... | 7¢ per lineal foot |
| 1½" diameter | ..... | 10¢ " " " |
| 1½" diameter | ..... | 12¢ " " " |
| 1½" diameter | ..... | 14¢ " " " |
| 1½" diameter | ..... | 16¢ " " " |
| 1½" diameter | ..... | 24¢ " " " |
| 2" diameter | ..... | 30¢ " " " |

Special diameters and lengths can be furnished. These Poles meet the requirements of the New Federal Mine Safety Code



EXPLOSIVE BOXES: Made entirely of wood having no metal parts, tongue grooved and dovetailed construction with automatic lock using a rubber band for a spring, treated with paraffin to make moisture resistant. "Approved by the Pennsylvania Department of Mines." Sizes as listed based on 1¼" x 8" sticks.

Powder Box Prices are as follows:

| | | | | | |
|--------|-------|-------------|--------|-------|-------------|
| No. 9 | ..... | \$2.30 each | No. 25 | ..... | \$4.65 each |
| No. 12 | ..... | 2.65 each | No. 36 | ..... | 5.85 each |
| No. 16 | ..... | 3.15 each | No. 50 | ..... | 6.90 each |
| No. 20 | ..... | 3.55 each | No. 72 | ..... | 7.90 each |

Detonator Box Prices are as follows:

| | | |
|----------------------------------|-------|-------------|
| No. 6, size 2½" x 3" x 6" inside | ..... | \$1.85 each |
| No. 8 size 2" x 2½" x 8" inside | ..... | 1.85 each |

J. V. Hammond Company **Spangler, Pennsylvania**

PLEASE SAY YOU SAW IT IN COAL MINING

NEW CONCORD MINE OF THE TENNESSEE COAL, IRON AND RAILROAD COMPANY

(Continued from Page 15)

zero pulp into from two to eight parts, all parts being quantitative and qualitative equals. The number of splits can be changed without stopping the flow of feed. Each split flows to a secondary distributor for further division into feeds for the individual concentrating tables.

Eight secondary distributors, similar in design to the primary distributor, are 6 feet in diameter and 6 feet high. Here again the number of splits in the feed flow can be changed with no shut-off, but the pulp in the secondary distributors can be subdivided only into seven or eight equal parts, each part feeding a concentrating table. This arrangement permits any one table in a section, or complete sections to be removed from operation for maintenance.

There are 64 concentrating tables consisting of eight sections of eight tables each. These are 8 by 16-foot diagonal-deck tables. Here the feed is separated into washed coal and refuse. The refuse flows to four drag dewatering tanks. Each tank serves two table sections. The refuse from these tanks is discharged to a 30-inch collecting belt conveyor. The water overflow passes to a 175-foot diameter thickener for further clarification.

Coal-bearing pulp from the tables is dewatered on eight 6 by 16-foot horizontal vibrating screens with 1/2-millimeter stainless steel cloth. Each screen serves a section of eight tables. Dewatered oversize is collected on a con-

Machines For Sale

Sturdevant No. 10 Blowers, 35,000 cu. ft. with 150 H. P. 220 volt motors and starters, like new.

Roots Size 16, Type A Blower, 6,000 cu. ft. per minute with 60 H. P. 220 volt motor, excellent.

Chas. M. Ingersoll Co.

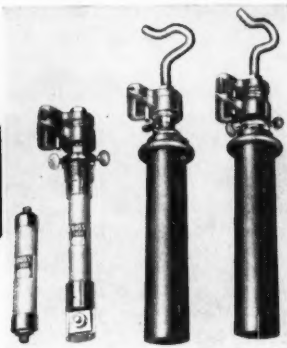
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For a positive grip on trolley wires

MESCO Clamp Type Trolley Tap



The Mesco Trolley Tap No. 1059 is equipped with grooved jaws which grip trolley wires firmly and give 2 3/4 inches of positive electrical contact. This feature is a definite advantage where power is needed in one locality for a period of time. Jaws are actuated by an Acme thread which cuts through dirt and rock dust. When paws are closed on the wire, a quick twist of the trolley tap locks threads so that jaws will not loosen unless tap is turned in opposite direction. Clamps are also available for use on bare feeder cables from 250,000 CM to 1,000,000 CM. Fuse holder takes either stud type fuse (illustrated) or ferrule type one time powder packed fuses.

For information, see your nearest distributor or write direct

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All links poured at one time from one heat of steel, insuring a chain of uniform analysis and heat treatment.

Designed for heavy service in all sizes.

MANGANESE WEDGE BARS

For repointing Excavator and Shovel Bucket Teeth.



McCLURE EQUIPMENT COMPANY

Phone: Court 1-5225

Jenkins Arcade

Pittsburgh 22, Pa.

veyor wheel the fine coal and water slurry pass through the screen and flow to two hydroseparator tanks.

Water laden with solids passing through the dewatering screens is split to feed the two hydroseparators, which are 70 feet in diameter. They are concrete tanks, each equipped with an automatic rake-lifting device. Here the solids settle and thicken and are raked to the center. They are withdrawn and pumped back through a distribution tank to the dewatering screens to serve as a second layer. The hydroseparators make a separation of approximately 270 mesh. Materials below that size overflow with the water and go to the 175-foot thickener.

This is a conventional thickener tank with the exception of the bottom, which has natural rock bed. Solids from the thickener are removed by two diaphragm pumps which discharge to a centrifugal pump sump. Two variable speed pumps deliver the sludge to the coal dewatering screens at about 50 per cent solids as a third layer.

The distribution tank, which was designed and built by Tennessee Coal, Iron and Railroad Company, has eight 4-inch outlets controlled by rubber pinch valves. Pulp in the tank represents approximately 45 per cent solids.

The dewatered washed coal from concentrating tables and from the gravity separator is combined and conveyed to a 300-ton storage bin from which it is loaded into cars and shipped to the coke works. Refuse from the gravity separator and from the concentrating tables is combined and conveyed to a 300-ton storage bin, from which it is hauled to the dump.

Clarified water from the thickener is returned to the plant circuit. The use of fresh water for pump glands, wash-down hoses and spray nozzles supplies sufficient plant make-up water. A high outside wall on the thickener permits it to serve as a reservoir for all water in the plant circuit in case of emergency.

The Concord preparation plant is equipped with sufficient double units to make possible maintenance on operating shifts. Provision for almost any emergency is made, so full capacity operations will not be interrupted. Governors and electrical interlocks or both are provided for every unit

of equipment in the plant whose operation depends on receiving the product from a preceding unit. This provision makes necessary the starting of equipment in proper sequence, while stoppage of any unit automatically stops all preceding units and prevents a plant choke-up. A central panel provided with warning and stop lights for all units controls the operation of the plant. All motors are totally enclosed and electrical equipment is watertight. This permits wash-down of all working places.

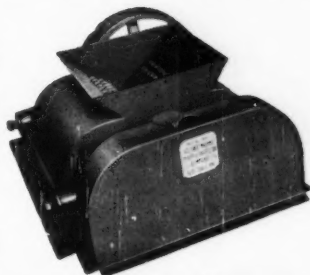
Up-to-date machine shops and repair shops above and below

ground insure good maintenance of equipment. A modern laboratory now being completed will guarantee a high quality coal which can be produced to uniform ash content down to $4\frac{1}{2}$ per cent.

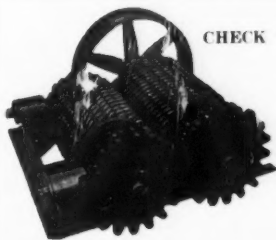
A new ventilating shaft for Jones and Laughlin Steel Corporation's Shannopin Mine near Bobtown, Pennsylvania, will be constructed by the Shaft and Tunnel Department of Dravo Corporation, it was announced today. The concrete-lined shaft with inside dimensions of 12 ft. 6 in. by 35 ft. will go down 175 ft.

Less POWER CONSUMPTION WITH **SCOTTDALÉ** double-roll COAL CRUSHERS

Through an efficient shredding action by toothed, double rolls assembled in a staggered position, Scottdale double-roll Coal Crushers operate on LESS power than conventional-type crushers.



This outstanding feature of Scottdale Coal Crushers results not only in economical operation, but also in more uniform, consistent coal products. Increase your coal processing efficiency—install SCOTTDALÉ double-roll COAL CRUSHERS! Write for more descriptive literature.



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CASUALTY COMPANY**

GREENSBURG, PA.



THE SYMBOL OF SERVICE
FOR COMMERCE AND INDUSTRY

Invisible thin films of moisture are what make graphite a lubricant, Robert H. Savage, General Electric scientist, has proved.

Electric brushes or contacts made of graphite and used to feed electric current to moving parts in motors or generators on high-altitude aircraft may have their useful life increased many thousands of times as a result of new lubrication methods devised by him.

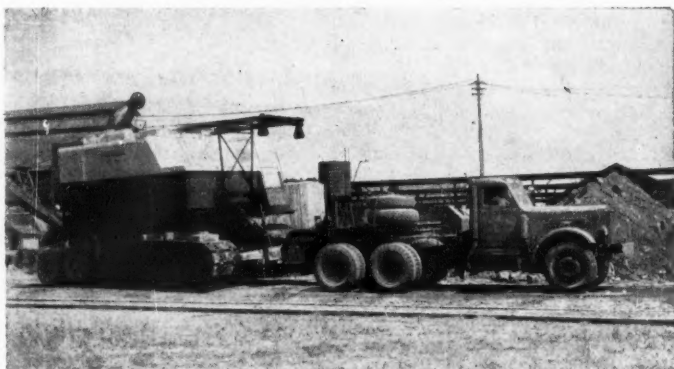
It was long thought that graphite, a solid slippery material, was a good lubricant in itself. Graphite consists of layers of atoms which can slide easily over each other. It was formerly thought that this property was inherent in the graphite alone. The

new discovery is that an invisible film of moisture is required for its lubrication.

Mr. Savage tested the wear of dry graphite brushes against a revolving copper disk in a vacuum chamber. Brushes were worn as fast as an inch an hour. When a small amount of water vapor was admitted to the chamber, the wear rate was reduced to less than a thousandth as much.

For electric motors and generators working on the ground, there is generally enough moisture in the atmosphere to provide the moisture film to the graphite. But modern aircraft fly at great altitudes with such low temperatures that water vapor is absent. M. Savage has devised a means of shielding the parts of electrical equipment where the brushes are used, and supplying water vapor to the space around them.

MOVERS of Coal Stripping and Contractor's Equipment



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Stoney Hollow Boulevard, Steubenville, Ohio, P. O. Box 547

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stripping shovels used exclusively by
successful Boron Brothers Coal Co.



Since purchase of its first OSGOOD Stripping Shovel over 12 years ago, Boron Brothers Coal Co., Philipsburg, Pa., has found OSGOOD performance so efficient and profitable that the firm has added other OSGOOD machines and has standardized on OSGOOD equipment.

Boron Brothers' OSGOOD Model 1006, shown above, has proved a real production booster in removal of deep overburden which consists of loam, sandstone, sandrock, and hard blue shale. This unit is completely air controlled and is equipped with the dependable OSGOOD Air Cushion Clutch. Forty-foot stick, placed 4½ feet above center of 45-foot boom, permits shovel to do work of machine with 50-foot boom. Be sure to see OSGOOD before you buy.



Equipment designed with your profit in mind

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M. R. Hamill, Inc., 1824 Pennsylvania Ave., P. O. Box 947, Charleston 23, W. Va.

James G. Hoag, 537 Larchwood Ave., Upper Darby, Pa.

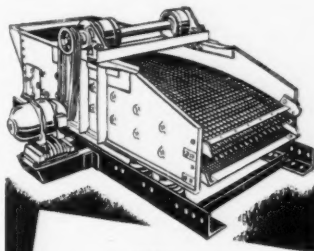
United Sales Corporation, 7620 Meade St., Wilkinsburg, Pittsburgh 21, Pa.

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POWER SHOVELS, CRANES
DRAGLINES, CLAMSHELLS
PILE DRIVERS & JACK HOES
CRAWLERS & MOTORGRADERS
DIESEL, GASOLINE OR
ELECTRIC POWERED
CAPACITIES ¼ TO 2½ CU. YD.



DURABLE DEPENDABLE DEISTER SCREENS

Sound design and rugged construction of Deister Vibrating Screens assure longer wear-life and durable, dependable performance on the toughest coal-sizing jobs. Write for catalog.



Say You Saw It In Coal Mining

CHAIN MANGANESE DRAGLINE CHAIN

available at once

1 ½" . . . 1½" . . . 1¾"

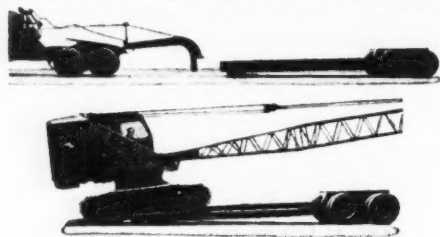


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which all means a saving of time and money on your equipment moves.

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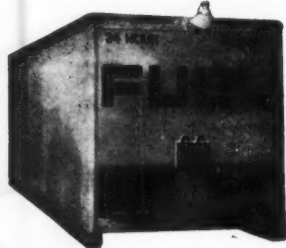
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Make it easier for prospects to buy your product through conveniently located, self-service vending stations. Sturdy-Built Stations enable you to merchandise, sell and deliver in one operation—at one lower cost. Profits go up with more sales at less operating cost. You can sell the year around.

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We will send complete descriptive literature, mechanical data and price lists. We will answer your questions and help you in any way possible concerning vending of fuel.

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Mining Equipment

NEW • REPAIRS • PARTS

We manufacture: Hoists - skips - cages - coal, slate and rock ladders - rotary dumps - conveyors - coke oven and tippie equipment.

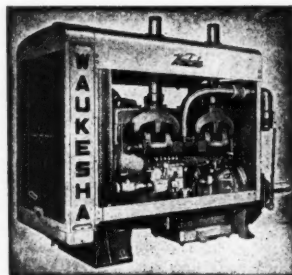
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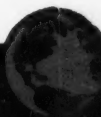
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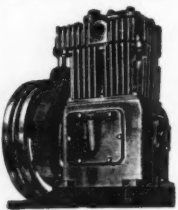


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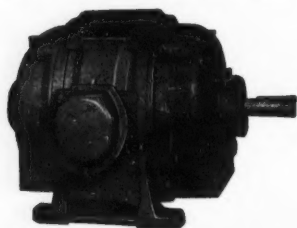
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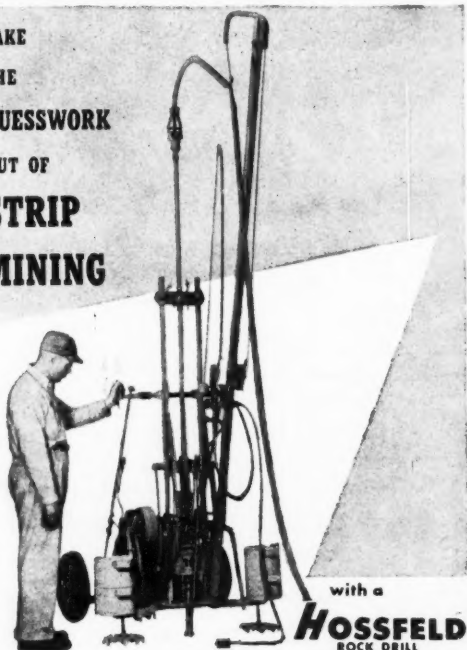


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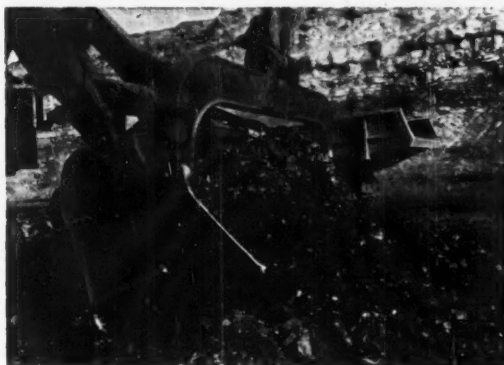
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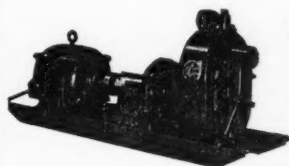
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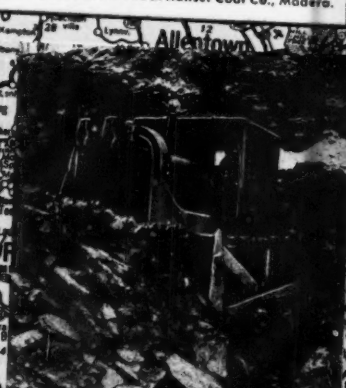
Lima 802 removes fireclay parting between seams at Hensel Coal Co., Madera.



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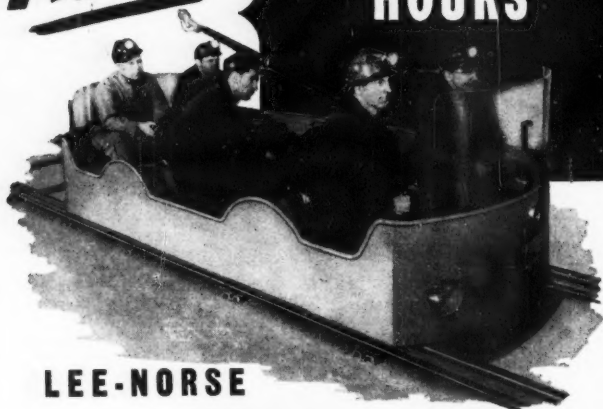
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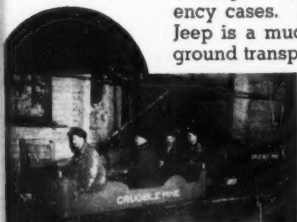
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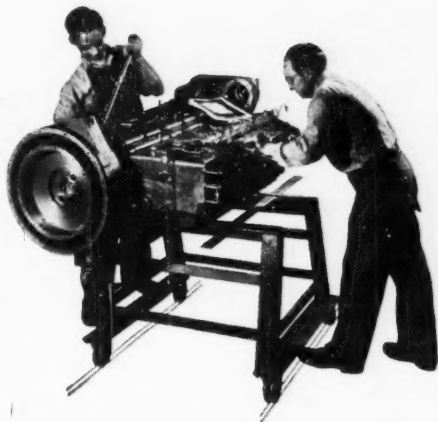
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